REMARKS

General Comments

Applicants thank the Examiner for considering Applicants' arguments in the Response under 37 C.F.R. § 1.111, filed on August 25, 2006. Further, Applicants thank the Examiner for withdrawing the previous rejection of claims 1, 12, and 13.

Claims 1-29 are all the claims currently pending in the application. Claims 4, 5, 11, and 15-26 have been withdrawn. Claims 1-3, 6-10, 12-14, and 27-29 have been rejected. The present Response addresses each point of rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

Rejection Under 35 U.S.C. § 102(e) - Heidel

Claims 1 and 6 have been rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Heidel. Applicants respectfully traverse these grounds of rejection.

Heidel is generally directed toward a semiconductor laser array assembly. As shown in Fig. 1 of Heidel, the assembly comprises a semiconductor laser array 10, a heatsink 12, and a lens assembly (col. 3, lines 32-36). The semiconductor laser array 10 contains a plurality of emitters 20 (col. 5, lines 47-53). The lens assembly collimates the output of the emitters 20, and comprises a first refractive lens 22 that collimates the fast axis, and a second binary optical element 24 that collimates the slow axis (col. 6, lines 23-39). The refractive lens 22 is attached to the binary optical element 24, and this lens assembly is then aligned with the emitters 20 (col. 7, lines 38-60).

However, there is no teaching or suggestion in Heidel of "a lens-setting surface which is flat, *perpendicular to optical axes of said plurality of laser diodes*, and located on a forward side

of said plurality of laser diodes at a predetermined distance from said light-emission points, and said collimator-lens array is fixed to said block so that *an end surface of the collimator-lens array is in contact with said lens-setting surface*," as recited by claim 1 (emphasis added). The Examiner maintains that the ears 25 of Heidel disclose this feature. Applicants respectfully disagree.

The lens assembly of Heidel is attached to the ears 25 of the heatsink 12 (col. 3, lines 32-39). As shown in Fig. 1, each end of the lens assembly is attached to an *inner surface* of one of the ears 25. The plane of this inner surface is *parallel* to the optical axis of the emitters 20, not perpendicular to the optical axis, as required by claim 1. Each of the ears 25 also has a *front surface* that is perpendicular to the optical axis of the emitters 20. However, the end surface of the lens assembly is *not* in contact with the front surface of the ears 25. Instead, as discussed above, the end surface of the lens assembly is fixed to the inner surface of the ears 25.

At least by virtue of the aforementioned differences, Applicants' claim 1 distinguishes over Heidel. Claim 6 is a dependent claim including all of the elements of independent claim 1. Therefore, Applicants submit that claim 6 is patentable over Heidel for at least the aforementioned reasons, as well as for its additionally recited features.

Rejection Under 35 U.S.C. § 103(a) - Heidel

Claims 12, 13 and 27-29 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Heidel. Applicants respectfully traverse these grounds of rejection.

Claim 12 recites a method for producing a laser apparatus, including, *inter alia*, "forming in said block a reference surface which is flat, perpendicular to optical axes of said plurality of laser diodes, and located on a forward side of locations at which said plurality of laser diodes are

fixed to the block," and "adjusting positions of said plurality of collimator lenses along said reference surface, and fixing the plurality of collimator lenses at the adjusted positions."

As discussed above, Heidel fails to teach or suggest forming a reference surface that is *perpendicular to optical axes of the plurality of laser diodes*, adjusting positions of the plurality of collimator lenses along the reference surface, and fixing the plurality of collimator lenses at the adjusted positions. Therefore, claim 12 is patentable over Heidel for at least the aforementioned reasons.

Claim 13 recites a laser apparatus comprising a block which "has a reference surface which is flat, perpendicular to optical axes of said plurality of laser diodes, and located on a forward side of portions of said block to which said plurality of laser diodes are fixed," wherein "said plurality of collimator lenses are fixed to said reference surface in such a manner that positions of the plurality of collimator lenses are adjusted along said reference surface."

As discussed above, Heidel fails to teach or suggest any reference surface which is *perpendicular to optical axes of the plurality of laser diodes*, and to which the plurality of collimator lenses are fixed. Therefore, claim 13 is patentable over Heidel for at least the aforementioned reasons.

Claim 27-29 are dependent claims including all of the elements of independent claim 1. Therefore, claims 27-29 are patentable over Heidel for at least the aforementioned reasons, as well as for their additionally recited features.

Rejection Under 35 U.S.C. § 103(a) - Heidel in view of Chiappetta

Claims 2 and 3 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Heidel in view of Chiappetta et al. (U.S. Patent No. 6,724,791; hereinafter "Chiappetta"). Applicants respectfully traverse these grounds of rejection.

As discussed above, Heidel fails to teach or suggest all of the elements of independent claim 1. Chiappetta does not remedy the deficiencies of Heidel. Although Fig. 2 of Chiappetta discloses a laser module 12 which is in thermal contact with a flat surface 58 of a cooling element 16, there is no teaching or suggestion in Chiappetta of a flat lens-setting surface which is *perpendicular to optical axes of said plurality of laser diodes* and in contact with an end surface of the collimator-lens array, as required by claim 1.

At least by virtue of the aforementioned reasons, claim 1 is distinguished over Heidel in view of Chiappetta. Claims 2 and 3 are dependent claims including all of the elements of independent claim 1. Therefore, claims 2 and 3 are patentable over Heidel in view of Chiappetta for at least the aforementioned reasons based on their dependencies, as well as for their additionally recited features.

Rejection Under 35 U.S.C. § 103(a) - Heidel in view of Andrews '188, Andrews '535, and Kuniyasu

Claims 7-10 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Heidel in view of U.S. Patent Number 5,640,188 to Andrews (hereinafter "Andrews '188") and further in view of U.S. Patent No. 5,432,535 to Andrews et al. (hereinafter "Andrews '535") and U.S. Patent Application Publication No. 2002/0018499 to Kuniyasu et al. (hereinafter "Kuniyasu"). Applicants respectfully traverse these grounds of rejection.

As discussed above, Heidel fails to teach or suggest all of the elements of independent claim 1. None of Andrews '188, Andrews '535, and Kuniyasu remedies the deficiencies of Heidel. Andrews '188 and Andrews '535 disclose multiple diode lasers affixed to surfaces and which allow for thermal dissipation. However, Andrews '188 and Andrews '535 both fail to teach or suggest a flat lens-setting surface which is *perpendicular to optical axes of said plurality of laser diodes* and in contact with an end surface of the collimator-lens array, as required by claim 1.

Kuniyasu discloses embodiments of a semiconductor laser with a plurality of layers formed on a substrate, and which achieves improved heat dissipation characteristics. However, Kuniyasu also fails to teach or suggest a flat lens-setting surface which is *perpendicular to optical axes of said plurality of laser diodes* and in contact with an end surface of the collimator-lens array, as required by claim 1.

At least by virtue of the aforementioned reasons, claim 1 is distinguished over Heidel in view of Andrews '188, Andrews '535, and Kuniyasu. Claims 7-10 are dependent claims including all of the elements of independent claim 1. Therefore, claims 7-10 are patentable over Heidel in view of Andrews '188, Andrews '535, and Kuniyasu for at least the aforementioned reasons based on their dependencies, as well as for their additionally recited features.

Rejection Under 35 U.S.C. § 103(a) - Heidel in view of Andrews '188 and Kuniyasu

Claim 14 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Heidel in view of Andrews '188 and Kuniyasu. Applicants respectfully traverse these grounds of rejection.

As discussed above, none of Heidel, Andrews '188 and Kuniyasu, alone or in combination, teaches or suggests all of the elements of independent claim 13. In particular, these references fail to teach or suggest any reference surface which is *perpendicular to optical axes of the plurality of laser diodes*, and to which the plurality of collimator lenses are fixed, as required by claim 13.

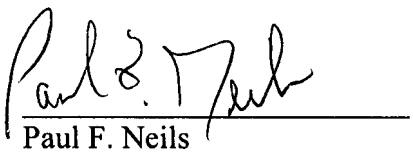
At least by virtue of the aforementioned reasons, claim 13 is distinguished over Heidel in view of Andrews '188 and Kuniyasu. Claim 14 is a dependent claim including all of the elements of independent claim 13. Therefore, claim 14 is patentable over Heidel in view of Andrews '188 and Kuniyasu for at least the aforementioned reasons based on its dependency, as well as for its additionally recited features.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Paul F. Neils
Registration No. 33,102

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
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